

# Vanderbilt Mansion National Historic Site

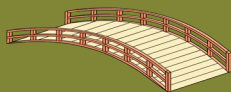


## Math & Science K-5

### CONTENT

K-PS2-1 Motion and Stability: Forces and Interactions  
Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

3-PS2-1 Motion and Stability: Forces and Interactions  
Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.



### CONNECTION

Vanderbilt replaced and constructed new bridges throughout the property using a variety of construction techniques. The White Bridge is one of the first Melan arch bridges built in the United States. The combination of a concrete arch, reinforced with metal I-beams, was a cheap yet durable method of bridge construction.

Remember that the biggest force affecting bridges is gravity, which is constantly pulling at them, trying to drag them down to earth. Bridges span open space and space provides no support against gravity.

### INVESTIGATION

Your task is to research and create a model of the White Bridge using recyclable materials found around your home. Learn as much as you can about the strongest shapes used in a bridge construction.

Think about how you will support your bridge using only the materials around you.

You will share your design with the park rangers at the Vanderbilt Mansion on a special Innovation Day.



## Math & Science 6-8

### CONTENT

CCSS.MATH.CONTENT.8.G.C.9  
Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems.

Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.



### CONNECTION

Vanderbilt was the director of 22 railroads. He worked in one railroad after another to learn more about the business. These railroads included the New York Central Railroad, the Pittsburgh and Lake Erie Railroad, and the Chicago and North Western Railroad. He also owned several transportation companies.

Laying track and living among the railroad construction camps was often very difficult. Railroad construction crews had to lay tracks across and through many natural geographical features, including rivers, canyons, mountains, and desert

### INVESTIGATION

Have you ever wondered how a train is able to stay on its tracks? In your middle school geometry class, you are studying cones, cylinders, and spheres. You are using them to solve real world problems.

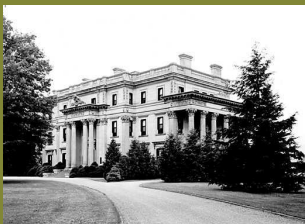
Your task is to investigate the semi-conical wheels on a train. Research how they keep trains on the tracks. Create several different wheel shapes to test why the conical wheel is superior to other designs. Set up a test for your wheels, collect the data, and present this to your teacher and classmates.

## Math & Science 9-12

### CONTENT

Identify the shapes of two dimensional crosssections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two dimensional objects.

Visualize relationships between two-dimensional and three dimensional objects  
Apply geometric concepts in modeling situations



### CONNECTION

The Vanderbilt Mansion National Historic Site is one of the area's oldest Hudson River estates. The three story, 54-room mansion is the work of the architectural firm McKim, Mead & White.

The 50,000 square-foot preserved home, and everything on the 211 acres that surround it, are an homage to the Gilded Age. Back in the day, this was considered a cottage, not a mansion.

They built this home in 1895 at a cost of 2.25 million dollars.

### INVESTIGATION

You have been hired by a local architectural firm. Your task is to research the Vanderbilt Mansion and then create a historically correct scale model. You can use TinkerCad or other online drawing program for your blueprints.

The most widely used scales for building models are 1:100, 1:150, 1:200 and 1:300. Explain the math behind your design as you work with two and three-dimensional shapes.

Your model will be on display at the Hyde Park Visitor's Center. Calculate the cost of building such a home today.

## History & Geography K-5

### CONTENT

D2.His.14.K-2. Generate possible reasons for an event or development in the past.

D2.Eco.13.K-5. Describe examples of capital goods and human capital.



### CONNECTION

You can find the Vanderbilt Mansion sitting on 200 acres in Hyde Park. It represents the upper class in the late 19th century America. Frederick Vanderbilt was the grandson of America's first multi-millionaire, Cornelius Vanderbilt. The Vanderbilts are one of the wealthiest and most prominent families in the United States. Frederick Vanderbilt was considered a philanthropist. They did not have children of their own, but they gave most of their money away to charitable organizations for children.

### INVESTIGATION

Research Frederick and his wife, Louise. Learn about their philanthropic activity. Formulate opinions on why they gave their money away. They gave millions of dollars to philanthropy, but always avoided personal recognition from his benefactors.

Research their givings and create an infographic or poster on the charitable organizations that benefited from Frederick Vanderbilt.



## History & Geography 6-8

### CONTENT

D2.Geo.6

Describe how environmental and cultural characteristics influence population distribution in specific places or regions.

D2.Geo.8

Explain how human settlements and movements relate to the locations and use of various natural resources.



### CONNECTION

Vanderbilt purchased Hyde Park in 1895. In 1901, the The Hyde Park farm group built a model farm. Vanderbilt was very proud of his prize-winning purebred Belgian horses and Jersey cattle. Frederick had earned a degree in horticulture from the Sheffield Scientific School at Yale and enjoyed using his training on the farm.

How could the farm today provide food for the community?

How does an industrial approach to agriculture compare with organic and sustainable approaches?

### INVESTIGATION

You have recently been hired as an agricultural manager for the National Parks. Your task is to research the workings of the Vanderbilt farm and create a multimedia presentation to share at a state environmental conference.

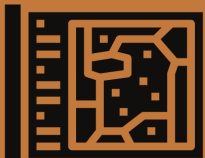
In your presentation include drawings and photographs of the original farm, a list of vegetation grown, livestock raised, and awards won. Share how this farm could be used as a working farm today to provide food to the community.

## History & Geography 9-12

### CONTENT

D2.His.6.9-12. Analyze the ways in which the perspectives of those writing history shaped the history that they produced.

D2.His.7.9-12. Explain how the perspectives of people in the present shape interpretations of the past.



### CONNECTIONS

In order to learn about the process of becoming a National Park, answer the following questions. Why were National Parks created?

What type of designation does Hyde Park have?

What is the difference between a National Park and a National Park Historic Site?

Why is it important that National Parks remain protected?

How are the National Parks different/the same?

### INVESTIGATIONS

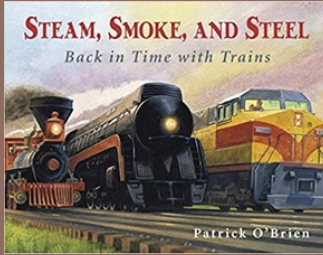
When Frederick died, he left the estate to his wife's niece, Mrs. Margaret Van Alen. She decided to dispose of the property. Because of its trees and beautiful mansion, President Franklin D. Roosevelt became interested in preserving the estate. He had it transferred to the NPS in 1939, and in July 1940, the property was opened to the public.

You have just been hired as an interpretive ranger at Hyde Park and your job is to tell visitors how National Parks are formed.

Research the specific information for Hyde and the political side of designation. You will share this with your first group of visitors.

## Literacy K-5

### LITERATURE



#### Steam, Smoke, and Steel Patrick O'Brien

This train travels through history making stops in time to learn about the progress of travel by rail. Hop up into the cab of a speeding modern-day locomotive and look down the tracks into the past.

### STRATEGY

Historical Survey text strategies include:

1. Activating Background Knowledge. As students learn more about the family business of the Vanderbilt's, they were able to make connections with the industry that made them wealthy.
2. Compare personal and historical timelines to create relevance. What in "my" life resembles what happened in the past?
3. Use the text and pictures to create your own research project.

### QUESTIONS

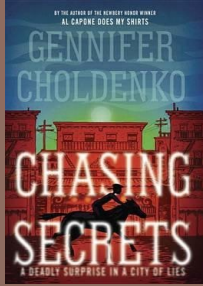
1. How has transportation changed overtime and how have those changes affected life the world around me?
2. How does my community use various modes of transportation?
3. What kinds of transportation do I use and why?
4. How are various modes of transportation similar and different?
5. Who operates the vehicles in my community?





## Literacy 6-8

### LITERATURE



#### CHASING SECRETS Gennifer Choldenko

Newbery Honor-winning author Gennifer Choldenko deftly combines humor, tragedy, fascinating historical detail, and a medical mystery in this historical fiction novel set in San Francisco, 1900 during the Gilded Age.

### STRATEGY

Reading historical fiction can be such a teaching moment for students. Have them compare Fact & Fiction. Give them opportunity to think about what is happening in the story and how it relates to the historical period in which it was written.

Create a double timeline of the book and compare it with the timeline of what is happening in the real world. Ask students to visualize the time period. Add graphics/pictures to your timeline.



### QUESTIONS

Lizzie and Billy's mother is dead. What is Aunt Hortense and Uncle Karl's role in rearing them?

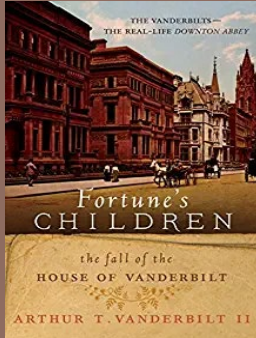
Describe the girls at Miss Barstow's school. Why doesn't Lizzie fit in?

Compare and contrast Dr. Kennedy and Dr. Roumalade. Discuss Dr. Roumalade's view of Lizzie's father.

Contrast Lizzie's and Billy's relationships with their father

## Literacy 9-12

### LITERATURE



#### Fortune's Children Arthur T. Vanderbilt II

For fans of Downton Abbey, a real-life American version of the Crawley family—Fortune's Children is an enthralling true story that recreates the drama, splendor, and wealth of the legendary Vanderbilts.

### STRATEGY

Use the skill of inference to help with reading comprehension. Ask students to formulate questions as they read. Encourage them to use what they already know about the subject in the text and then look for evidence in the text that supports their question. This information should lead them to their answer. They could use the framework of:

1. Quotes
2. Connections
3. Visualization
4. Character Descriptions
5. Plot Elements



### QUESTIONS

How do our world views impact the way we view world events?

How does one's perspective distort or confirm history?

Describe the time period.

What are some important facts of this time period?

What conclusions can you draw about the Vanderbilts?

What about John D. Rockefeller, Andrew Carnegie, and J.P. Morgan?



## Vanderbilt Mansion

### Indigenous People of Vanderbilt

### Nature & Science





## Writing Prompts:



**What do you see? What do you know? What do you wonder?**  
**Vanderbilt Mansion**



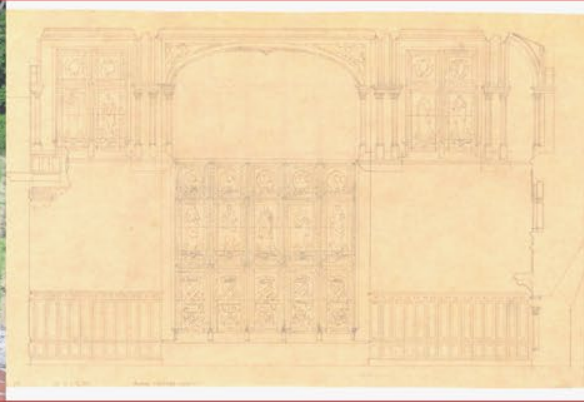




## Writing Prompts:



**What do you see? What do you know? What do you wonder?**  
**Vanderbilt Mansion**





# NATIONAL PARKS EXPEDITION CHALLENGE VANDERBILT MANSION NATIONAL HISTORIC SITE



According to the National Park Service (NPS), there is a need to maintain and preserve the designed landscape at the Vanderbilt estate. This landscape is still intact and paints a picture of over 200 years of landscape design. The NPS wants to manage the landscape to preserve its character as it was in 1939.

The current proposal is to remove a certain section of white pine and hemlock trees and replace them with the same or similar species. The area covers about 460 acres. Your task is to survey the lands and design a plan to replace these trees. Be aware that there is a danger that the trees will fall and hit cars on the busy highway so there is some urgency in the request. Additionally, the group of trees were planted in 1906 to hide the estate from the road. This is no longer an issue. Create a presentation that you can share with the NPS staff and rangers.